Quick start: **Panic Watch EU**

Technical specifications

Normal operating voltage	1x CR2450 3V battery
Battery lifetime	Min 3 till 5 years
Frequency range	868.42 MHz EU
Wireless range	Min. 30 meters in line of sight

Basic operations

- The *Panic Watch* can trigger any rule or lifestyle
- The *Panic Watch* can be configured to your needs
- The *Panic Watch* is easy to install and configured
- Indoor use only
- Water resistant
- Big red button with time configurable activation time

How it operates

After a successful inclusion the *Panic Watch* can be used.

When pressing a button the led will blink to notice the customer that a successful alarm message is sent.

With a controller you can make all different kind of rules and lifestyle changes.

It also possible sent the alarm directly to a Z-Wave based alarm device.

V0.28 and higher has TOGGLE functionalities first time press the SOS-button it sends out alarm 0xFF next time SOS-button is pressed the panicwatch will sent reset alarm 0x00 message.

Use

1. Before use, the *Panic Watch* should be included into a Z-Wave network and associated.
2. You can test your *Panic Watch* by pressing the button for one second untill the led is turned on (press time is configurable).
3. Don't forget to update and syncronize your rules in the Internet Gateway.

Include or Exclude in Z-Wave network [1]

1. Press and hold the SOS push button until the indicator light starts blinking. Then release the button to start the inclusion or exclusion process.
   (Note: Normally button should be pressed for 2 seconds but in case the product is already included it can take up to 12 seconds before the indicator light will start blinking.)
2. When classic inclusion failed, the product will start Network Wide Inclusion automatically.

Force wakeup notification

1. When included press and hold the SOS push button for approximately 4 seconds.

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[1] Make sure your Z-Wave controller is in the correct operation mode (include or exclude).

Caution:
- **This device is using a radio signal that passes through walls, windows and doors. The range is strongly influenced by local conditions such as large metal objects, house wiring, concrete, furniture, refrigerators, microwaves and similar items. On average, the indoor range is approximately 30 meters.**
- **Do not expose this product to excessive heat or moisture.**
- **Prevent long term exposure to direct sunlight.**
- **Do not attempt to repair this product. If the product is damaged or if you are in doubt about the proper operation, take the product back to the place of purchase.**
- **Do not clean the product with any chemical liquid.**
- **Indoor use only.**

Technical details

Normal operating voltage	1x CR2032 3V battery (version <0.28) 1x CR2450 3V battery (version >=0.28) Do not use rechargeable batteries
Battery lifetime	CR2032 Min 2-3years CR2450 Min 5 years
Frequency range	868.42 MHz
Wireless range	Approximately 30 meters in line of sight Min. 150 meters with a good mesh network (max. 4 hops)
Storage temperature	-5°C to +65°C
Storage humidity	10% to 70%
Operating temperature	0°C to 50°C
Operating humidity	30% to 80%

Product dimensions (length x width x height)

Panic Watch = 46 x 46 x 15 mm

Packaging sizes:
52mm x 31mm x 130mm

Total weight (carton packaging and product incl battery):
Approx. 50grams

Indication mode

The indicator light gives various statuses of the device as follows:

1. Ready for learn mode: indicator light blinks every second
2. Learn in progress (add):   indicator light 2 times every second
3. Learn in progress (remove):   indicator light 3 times every 1.5 second
4. Learn mode success: indicator light is on for one second
5. RF message send success: indicator light is on for one second
6. RF message send failed: indicator light blinks 6 times rapidly
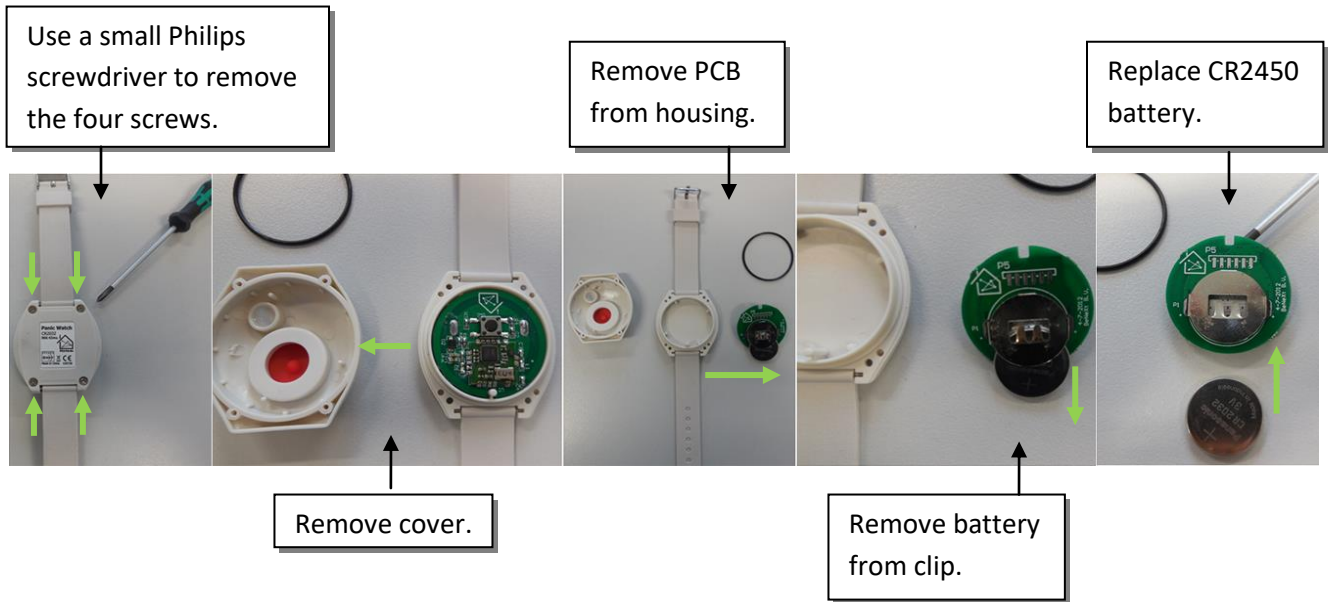7. No association is set: indicator light blinks 6 times rapidly

Supporting command classes:

Basic type: BASIC_TYPE_ROUTING_SLAVE
Generic type: GENERIC_TYPE_SENSOR_BINARY
Specific type: SPECIFIC_TYPE_NOT_USED
Listening: False, Z-Wave Lib: 4.54

class: 0x30 COMMAND_CLASS_SENSOR_BINARY
class: 0x85 COMMAND_CLASS_ASSOCIATION
class: 0x84 COMMAND_CLASS_WAKE_UP
class: 0x86 COMMAND_CLASS_VERSION
class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC
class: 0x70 COMMAND_CLASS_CONFIGURATION
class: 0x80 COMMAND_CLASS_BATTERY
class: 0x71   COMMAND_CLASS_ALARM
class: 0xEF COMMAND_CLASS_MARK
class: 0x20 COMMAND_CLASS_BASIC

Replace battery

Use a small Philips screwdriver to remove the four screws.

Remove PCB from housing.

Replace CR2450 battery.

Remove cover.

Remove battery from clip.

Not listening routing slave

This Z-Wave product will be used as routing slave. Slave nodes are nodes in a Z-Wave network that receive commands and perform actions based on the command. This device will always be in sleep mode because it works on batteries. In sleep mode the device is not active listening, the device will wake up according to the wakeup command class.

Include initiator

The include initiator is used when Primary and Inclusion Controllers include nodes into the network. When both the include initiator have been activated simultaneously the new node will be included to the network (if the node was not included previously).

Exclude initiator
The exclude initiator is used by Primary Controllers to exclude nodes from the network. When the exclude initiator and a slave initiator are activated simultaneously, it will result in the slave being excluded from the network (and reset to Node ID zero). Even if the slave was not part of the network it will still be reset by this action.

Z-Wave compatibility

Because this is a Z-Wave device, it means it can co-operate with other Z-Wave devices of other manufacturers. It can co-exist in a Z-Wave network existing with product from other manufacturers.

Hops & retries
The Z-Wave range has a range of up to 30 meters in line of sight. This signal is not limited to the 30 meter range due to routing the Z-Wave message to other nodes in the network. This way the range of the Z-Wave network can be expanded to 150 meters indoors (limit of 4 hops).

class: 0x20 COMMAND_CLASS_BASIC
When a button is pressed for one second a basic set frame with value 255 is sent to the associated nodes.

The supporting role of the Basic command class is mapped to the Sensor Binary command class.

class: 0x25 COMMAND_CLASS_SENSOR_BINARY
The Sensor Binary command class can be used to check the status of the *Panic Watch* (triggered or idle). Where "255" is triggered, and "0" is idle.

class: 0x86 COMMAND_CLASS_VERSION
This command class is used to obtain information about the *Panic Watch*. The Z-Wave library type, the Z-Wave protocol version and the application version will be reported.

class: 0x72 COMMAND_CLASS_MANUFACTURER_SPECIFIC
This will report information about the manufacturer. This product will contain the manufacturer ID of *BeNext*. Manufacturer ID of *BeNext* is 138, the ID of this product is 21.

class: 0x70 COMMAND_CLASS_CONFIGURATION
Configure parameters:

    0. Not used
    1. Set to default
       Description: Set all configuration values to default values (factory settings).
                                  Read more in chapter Configuration Reset.
       Size: 1 byte*
       Param1:   If 0xFF then set to default
       Param2,3,4:   Not used

2. **Time to press the Panic Watch**

Description:	The time that the panic pushbutton must be pressed before a (panic) message is sent out to the controller.
Default:	0x64 (*10ms = 1 second)
Size:	1 byte*
Param1:	If 0x00: send directly the panic message when pressed
	If 0x01 - 0xFF: send a panic message after you keep holding the button pressed for this value x 10ms.

3. **Min. led feedback time panic**

Description:	Minimum time that led feedback is shown after a panic message.
Default:	0x64 (*10ms = 1 second)
Size:	1 byte*
Param1:	If 0x00: led only stays on during the 'send time'.
	If 0x01 - 0xFF: led stays on during send time + this value*10ms.

4. **Buttons mapped**

Description:	With this config parameter you can map the buttons to send different Z-Wave messages.
Default:	0xFF
Size:	1 byte*
Param1:	if 0x00:
	SOS button sends an ALARM_REPORT to nodes group 1
	If 0x01 – 0xFF:
	SOS button sends an BASIC_SET, 0xFF to nodes group 1

5. **Not used**
6. **Not used**
7. **Do not use**

* If a size is other then given size the frame is ignored totally so configuration values are **not** changed.

class: 0x71 COMMAND_CLASS_ALARM

This command class is used to identify the state of the alarm button. The device will send an unsolicited report to the controller if the status is changed, the value 0x00 or 0xFF will indicate an alarm event the value is automatically toggled.

There is one alarm type:
1: Panic Alarm

Every other alarm type that is requested will be ignored by application.

class: 0x85 COMMAND_CLASS_ASSOCIATION

The Association command class is used to associate other devices with the *Panic Watch*. The devices that are associated can be controlled on application level.

The *Panic Watch* can be associated into a grouping. If so, the *Panic Watch* can control other Z-Wave device (does not have to be a controller).

The Panic Watch has two association groups.

<u>Group 1</u>
Maximum supported nodes: 8

If configuration parameter 4 configured with value 0 then this group is used
- SOS button: send ALARM_REPORT.

If configuration parameter 4 configured with value other then 0 (1-255) then this group is used
- SOS button: send BASIC_SET, 0xFF.

<u>Group 2</u>
Maximum supported nodes: 8
Not used on application.

Class: 0x80 COMMAND_CLASS_BATTERY
This class is used to request and report battery levels for a given device.
When battery level is lower then 20% the Panic Watch will send a battery warning (value 255) after every wake up notification. A battery get will report the actual value even if it is below 20%.

When the batteries are placed an unsolicited battery report is sent (when included).

class: 0x84 COMMAND_CLASS_WAKE_UP
The Wake Up command class is used at battery-operated devices. This class allows the *Panic Watch* to wake up occasionally to notify others devices, that the *Panic Watch* is ready to receive commands. After receiving the commands the *Panic Watch* will go into sleep mode again. The wake up interval can be set using the WAKE_UP_INTERVAL_SET command.

The default value is 0x15180 = 86400 sec = 24 hour
The default node is 0xFF = 255 (broadcast)

Warning, since version 0.32 the minimal wakeuptime is every 24hours. All values lower then 24hours (86400sec) will be ignored.

It is possible to send a **wake up notification** on user interaction. To do this press and hold the Panic Watch for 14 seconds. Ignore the blinking of the led and keep the button pressed for at least 14 seconds.

Operating modes
The Panic Watch supports two different modes.

<u>Mode 1: Alarm mode</u>
This mode is mainly used to notify a controller of an alarm or trigger an alarm on a Z-Wave supported alarm device.

Product can act on two types of handles.
When single pressed (and hold): press and hold the button, the duration to hold depends on the configured

values (parameter 2).

When double pressed: quickly (within 500 msec.) double press the button.

This mode can be configured with the following frame:
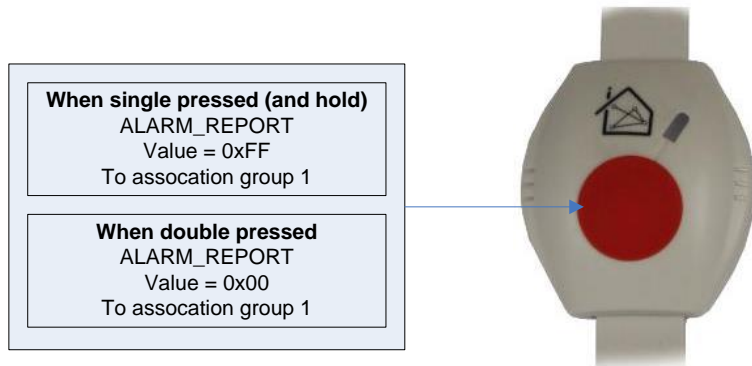
CONFIGURATION_SET

Parameter: 0x04

Size: 0x01 (can't be different from 1)

Value: 0x00

Below figure shows an overview of the Z-Wave frames, values and association groups.

When single pressed (and hold)
ALARM_REPORT
Value = 0xFF
To assocation group 1

When double pressed
ALARM_REPORT
Value = 0x00
To assocation group 1

Mode 2: Control mode

This mode is mainly used to control a Z-Wave other device by directly sending a BASIC_ON or BASIC_OFF.

Product can act on two types of handles.

When single pressed (and hold): press and hold the button, the duration to hold depends on the configured values (parameter 2).

When double pressed: quickly (within 500 msec.) double press the button.

This mode can be configured with the following frame:
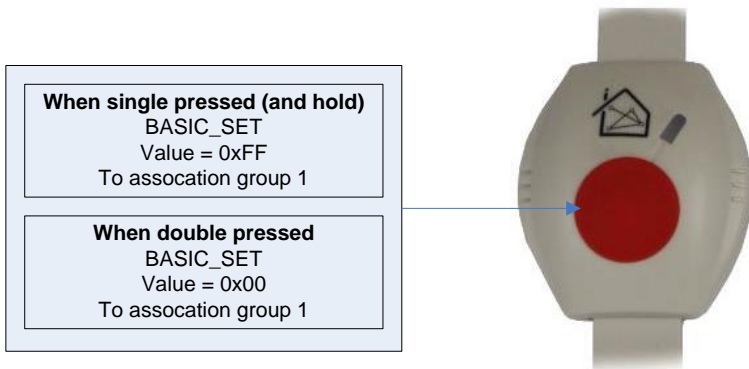
CONFIGURATION_SET

Parameter: 0x04

Size: 0x01 (can't be different from 1)

Value: 0x01 – 0xFF

Below figure shows an overview of the Z-Wave frames, values and association groups.

When single pressed (and hold)
BASIC_SET
Value = 0xFF
To assocation group 1

When double pressed
BASIC_SET
Value = 0x00
To assocation group 1

Configuration reset

The Panic Watch supports a configuration resets function. Configuration reset means:
- All configuration values are defaulted

This function can be activated by sending a configuration set frame:

CONFIGURATION_SET
Parameter: 0x01
Size: 0x01 (can't be different from 1)
Value: 0xFF (can be any value except for 0x55 or 0xAA)

When the value of configuration value is requested, two possible values can be returned.

CONFIGURATION_REPORT
Parameter: 0x01
Value 0x55:   Device doesn't have all his configuration settings anymore.
                Even when a configuration parameter is changed back to the default value
Value 0xAA: Devices still has all his factory settings.
                This are only configuration parameters, wake up interval can be changed.

Frequently Asked Questions

Q: I can't have my *Panic Watch* included into my Z-Wave network, what am I doing wrong?

A: **1**. Is the controller ready to include any device into the Z-Wave network? If the controller is not in include or exclude mode, the *Panic Watch* will not be included or excluded.

         2. The *Panic Watch* is already included in a Z-Wave network (check your led feedback!). Exclude the *Panic Watch* and try again.

         3. manually reset to factory settings, make sure the product is ready for exclusion (press and hold the button for 12sec and then release it), now the led will start blinking and you will have to press 5times quickly on the sos button, the led will go on for 1 sec to indicate a successful factory reset.

Q: I have configured a value but when I request it, it is not changed?

A: It is mandatory that the correct size is used while configure a parameter; go to the documentation about the configuration command class to check if the right size is used during configuration. If the wrong size is used the frame is ignored totally.

Q: I have configured a new value and when I request it the correct value is returned but the behavior is still the same?

A: Some configuration parameters have limits of what they can do, go to the documentation about configuration to check if the value of the configured parameter is out off limit.

Q: how to force a wakeup notification?

A: Keep the pushbutton pressed for more than 18 seconds.